

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A locking system for mechanical joining of floorboards, said locking system comprising a tongue-and-groove joint, the groove and tongue of which have cooperating upper abutment surfaces and cooperating lower abutment surfaces for vertical locking of two joint edges of two adjacent floorboards, said upper abutment surfaces extending in a first plane essentially parallel to a principal plane of the floorboards and said lower abutment surfaces extending in a second plane essentially parallel to the principal plane of the floorboards, and said locking system comprising, for horizontal mechanical joining of the joint edges perpendicular to the joint edges, a locking groove formed in an underside of a first one of the floorboards and extended in parallel therewith and spaced from the joint edge, and a portion projecting from a second one of the floorboards, said portion supporting, at a distance from the joint edge, a locking element cooperating with the locking groove, wherein said tongue is anglable into the groove, and wherein the locking element is insertable into the locking groove by mutual angular motion of the floorboards about upper portions of the joint edges, wherein in a joined state, the cooperating upper abutment surfaces are in contact with each other and are limited horizontally inwards from the joint edge and horizontally outwards to the joint edge by an inner vertical plane and an outer vertical

plane, respectively, the tongue-and-groove joint is so designed that there is in the groove between the inner vertical plane and the outer vertical plane and below the tongue, a space which extends horizontally from the inner vertical plane and at least halfway to the outer vertical plane, an uppermost surface of the locking element is below the first plane, and at least a portion of the lower abutment surfaces are positioned outside the outer vertical plane, ~~and~~

wherein in an angling state, the tongue-and-groove joint is further so designed that the floorboards, during a final phase of an inwards angling when the locking element is inserted into the locking groove, can take a position where there is space in the groove between the inner and the outer vertical plane and below the tongue, and

wherein the projecting portion is at least partially made in one piece with a body of the floorboard.

2. (Previously Presented) The locking system as claimed in claim 1, wherein said space in the joined state is horizontally extended below the tongue all the way from the inner vertical plane to the outer vertical plane, so that no part of the lower abutment surfaces is positioned inside the outer vertical plane.

3. (Previously Presented) The locking system as claimed in claim 1, wherein said space during the final phase of the inwards angling is horizontally extended below the tongue all the way from the inner vertical plane to the outer vertical plane.

4. (Previously Presented) The locking system as claimed in claim 1, wherein the groove in the joined state has an upper and a lower horizontal surface which constitute inwardly directed extensions of the upper abutment surface and the lower abutment surface, respectively, of the groove, and wherein there is in the joined state a horizontal play between a bottom of the groove and a tip of the tongue.

5. (Previously Presented) The locking system as claimed in claim 1, wherein the outer vertical plane is located at a horizontal distance inside a vertical joint plane, which is defined by adjoining upper portions of the joined joint edges of the two floorboards.

6. (Previously Presented) The locking system as claimed in claim 1, wherein the lower abutment surfaces are located at least partially outside a vertical joint plane which is defined by adjoining upper portions of the joined joint edges of the two floorboards.

7. (Previously Presented) The locking system as claimed in claim 6, wherein the major part of the lower abutment surfaces is positioned outside the vertical joint plane.

8. (Previously Presented) The locking system as claimed in claim 1, wherein the projecting portion and the groove are arranged in one and the same joint edge of the floorboard.

9. (Canceled)

10. (Previously Presented) The locking system as claimed in claim 9, wherein the locking element of the projection portion is positioned on a level with or toward an underside of the floorboard from the lower abutment surface of the groove.

11. (Previously Presented) The locking system as claimed in claim 1, wherein the projecting portion is at least partially formed of a material other than that of a body of the floorboard.

12. (Previously Presented) The locking system as claimed in claim 11, wherein the projecting portion is at least partially formed of a separate strip which is integrally connected with the board by being mounted in the factory.

13. (Previously Presented) The locking system as claimed in claim 1, wherein the projecting portion is resilient transversely of the principal plane of the floorboards.

14. (Previously Presented) The locking system as claimed in claim 1, wherein the tongue is insertable into the groove and the locking element is insertable into the locking groove by a mutual horizontal joining of the joint edges of the boards.

15. (Previously Presented) The locking system as claimed in claim 14, wherein the groove has in an upper part a beveled portion for guiding the tongue into the groove.

16. (Previously Presented) The locking system as claimed in claim 1, wherein the projecting portion, in a horizontal direction between the lower abutment surfaces of the tongue-and-groove joint on the one hand and the locking element of the projecting portion on the other hand, has a lower portion which is positioned toward an underside of said floorboard from said lower abutment surfaces.

17. (Previously Presented) The locking system as claimed in claim 1, wherein the tongue is anglable into the groove and the locking element is insertable into the locking groove by said mutual angular motion of the boards about upper portions of the joint edges while said upper portions are held in mutual contact.

18. (Previously Presented) A floorboard provided along one or more sides with a locking system as claimed in claim 1.

19. (Previously Presented) The floorboard as claimed in claim 18, which has opposite long sides and short sides and which is mechanically joinable along each long side with a long side of an identical floorboard by downward angling and which is mechanically joinable along each short side with a short side of an identical floorboard by displacement along said long sides.

20. (Previously Presented) The locking system of claim 1, wherein the locking system is on each of four edges of a floorboard.

21. (Previously Presented) The locking system of claim 1, wherein the projecting portion is resilient.

22. (Previously Presented) The locking system of claim 12, wherein the strip is resilient.

23. (Previously Presented) The locking system of claim 1, wherein all of the lower abutment surfaces are positioned outside the outer vertical plane.

24. (Previously Presented) The locking system of claim 1, wherein the upper abutment surface of the locking element is below the second plane.

25. (Previously Presented) The locking system as claimed in claim 1, wherein the cooperating upper abutment surfaces are at least partially displaced from the cooperating lower abutment surfaces in a displacing direction parallel to the principle plane of the floorboards.

26. (Previously Presented) The locking system as claimed in claim 1, wherein at least a portion of the lower cooperating abutment surface is horizontally inward from a vertical joint plane defined by a contacting portion of two juxtaposed upper portions of the floorboards, a first juxtaposed upper portion on a first one of the

floorboards and a second juxtaposed upper portion on a second one of the floorboards.

27. (Previously Presented) The locking system as claimed in claim 1, wherein at least a portion of the lower cooperating abutment surface is between the outer vertical plane and a vertical joint plane defined by a contacting portion of two juxtaposed upper portions of the floorboards, a first juxtaposed upper portion on a first one of the floorboards and a second juxtaposed upper portion on a second one of the floorboards.

28. (Currently Amended) A locking system for mechanical joining of floorboards, the locking system comprising:

a tongue-and-groove joint, the groove and tongue of which have cooperating upper abutment surfaces and cooperating lower abutment surfaces for vertical locking of two joint edges of two adjacent floorboards, wherein the upper abutment surfaces extend in a first plane essentially parallel to a principal plane of the floorboards and the lower abutment surfaces extend in a second plane essentially parallel to the principal plane of the floorboards;

a locking groove formed in an underside of a first one of the floorboards and extended in parallel therewith and spaced from the joint edge; and

a portion projecting from a second one of the floorboards, the portion supporting, at a distance from the joint edge, a locking element cooperating with the locking groove,

wherein the locking groove and the locking element are for horizontal mechanical joining of the joint edges perpendicular to the joint edges,

wherein both the tongue is anglable into the groove and the locking element is insertable into the locking groove by mutual angular motion of the floorboards about upper portions of the joint edges, and

wherein in a joined state the cooperating upper abutment surfaces are in contact with each other and the cooperating upper abutment surfaces extend in a contacting state beginning at a first position in the groove at an inner vertical plane and ending at a second position in the groove at an outer vertical plane, wherein the outer vertical plane is closer to the joint edge than the inner vertical plane, and the tongue-and-groove joint includes a space in the groove between the inner vertical plane and the outer vertical plane and below the tongue, the space extending from the inner vertical plane to at least halfway to the outer vertical plane, an uppermost surface of the locking element is below the first plane, and at least a portion of the lower abutment surfaces are positioned between the outer vertical plane and the joint edge, and

wherein the projecting portion is at least partially made in one piece with a body of the floorboard.

29. (Previously Presented) The locking system of claim 28, wherein in an angling state and during a final phase of an inwards angling when the locking element is inserted into the locking groove, the tongue-and-groove joint includes a space in the groove between the inner and the outer vertical plane and below the tongue.

30. (Previously Presented) The locking system of claim 28, wherein in the joined state, the cooperating lower abutment surfaces are in contact with each other.

31. (New) The locking system of claim 1, wherein an uppermost surface of the locking element is spaced apart from surfaces of the locking groove and wherein a distal-most surface of the locking element is spaced apart from surfaces of the locking groove.

32. (New) The locking system of claim 1, wherein the entire projecting portion is made in one piece with a body of the floorboard.

33. (New) The locking system of claim 28, wherein an uppermost surface of the locking element is spaced apart from surfaces of the locking groove and wherein a distal-most surface of the locking element is spaced apart from surfaces of the locking groove.

34. (New) The locking system of claim 28, wherein the entire projecting portion is made in one piece with a body of the floorboard.